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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,020	09/24/2003	Woon Hyung Jung	CU-3367 RJS	4543

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EXAMINER

SHERMAN, STEPHEN G

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/670,020	JUNG, WOON HYUNG	
	Examiner	Art Unit	
	Stephen G. Sherman	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed the 13 November 2006.
Claims 1-3 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-3 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation that "the timing control unit controls the timing of the transmitted output control signal when the level register registers a level analog power supply voltage from the power supply circuit and the timing control unit controls the timing of the transmitted output control signal by a delay of a load signal" must be shown or the feature(s) canceled from the claim(s).
No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

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prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 1 recites the limitation that "the timing control unit controls the timing of the

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transmitted output control signal when the level register registers a level analog power supply voltage from the power supply circuit.” There is insufficient description in the specification to allow “one of ordinary skill” in the art to understand what is meant by this limitation. The closest description appears on page 6, lines 3-7 of the specification, however, it is only stated that it is possible to match the timing by the **change of the shape** of an analog power supply voltage, not that the timing is controlled based on a **level** analog power supply voltage, and since there is no drawing showing this feature of the claim “one of ordinary skill” in the art would not be enabled by the specification to make or use the invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
8. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Figures 1-3 and the specification, page 1, line 12 to page 2, line 19 and page 4, line 18 to page 7, line 2.) in view of Kanbe et al. (US 2002/0105490).

Regarding claim 1, AAPA discloses a device for driving an LCD comprising:

- a timing control unit (Figure 1, Timing Controller ASIC 106);
- a gate driving unit (Figure 1, Gate Driving IC 110) operatively connected to said timing control unit (Figure 1 shows Gate Driving IC 110 connected to the Timing Controller ASIC 106) and operatively connectable to a power supply circuit (Figure 2 shows a power supply circuit 204), the gate driving unit having a shift register (Figure 2, Shift Register 202), a level register (Figure 2, Level Register 206) and an output circuit (Figure 2, Output Circuit 208), wherein the shift register, level register and the output circuit operatively interconnected together (Figure 2 shows that the Level Register 206, Shift Register 202 and Output Circuit 208 are connected.); and
- a control signal transmission line operatively connected to the gate driving unit (Figure 2 shows that STV and OE are operatively connected to the gate driving unit.), the control signal transmission line for transmitting a data carry signal for enabling the shift register (Figure 2 shows STV) and the control signal transmission line for transmitting an output control signal for controlling a data output by the output circuit (Figure 2 shows OE), and wherein the timing control unit controls the timing of the

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transmitted output control signal when the level register registers a level analog power supply voltage from the power supply circuit (Page 5, lines 20-25 and page 6, lines 10-13.).

AAPA fails to teach wherein the control signal transmission line is a single signal line, and wherein the timing control unit controls the timing of the transmitted output control signal by a delay of a load signal.

Kanbe et al. disclose of a control transmission line in which a line used to carry an output control signal and a data carry signal is a single signal line (Figure 29 shows that the output from the OR gate 122 is SP, and as shown in Figure 30, the SP output from the OR gate is a combination of the start signal and the enable single, where since the CONTROL IC 121 is a part of the gate driver, then the signal line SP is operatively connected to the gate driver, see paragraph [0182].), and wherein the timing control unit controls the timing of the transmitted output control signal by a delay of a load signal (As shown in Figure 28, the enable signal is sent to a high level after a delay from when the ON/OFF judging signal is at a high level.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the teaching of Kanbe et al. with the device taught by AAPA in order to make an erasing action possible and also to allow for the device to be driven when the power to the device is turned OFF.

Regarding claim 2, AAPA and Kanbe et al. disclose the device as claimed in claim 1.

AAPA also discloses wherein the data carry signal uses a rising edge trigger system (Page 6, lines 10-13).

Regarding claim 3, AAPA and Kanbe et al. disclose the device as claimed in claim 1.

Kanbe et al. also discloses wherein in order to prevent an overlapping of the data carry signal and the output control signal, the output control signal is outputted after one clock from a time point where the data carry signal is latched using the shift register (Figure 30 shows that the SP output from the OR gate goes into a high state from the gate enable signal one clock period after a pulse from the SP' output from the control IC.).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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13 December 2006

AMR A. AWAD
SUPERVISORY PATENT EXAMINER
